

SANITARY SURVEY FORM - INVENTORY

Page 1 of 27

PWSID 0400030 Date of Survey: 03/24/2016		SYSTEM NAME <u>Pisinemo Intertie</u>	
DATE OF SURVEY 03/24/2016		RESERVATION Tohono O'odham	
(SYSTEM REPRESENTATIVE) Vernetto Ramon--Lab Supervisor		(OTHER REPRESENTATIVE) Amber Ramon--Commercial Rep/Lab	
SYSTEM ADDRESS Addressee <u>Tohono O'odham Utility Authority (TOUA)--C/O Myrt McIntyre, Manager</u> Street <u>P.O. Box 816</u> City <u>Sells</u> State <u>AZ</u> Zip <u>85634</u> System Phone <u>(520)383-5830</u> Fax <u>(520)383-2218</u>		SYSTEM OWNER Addressee <u>Tohono O'odham Utility Authority (TOUA)</u> Street <u>P.O. Box 816</u> City <u>Sells</u> State <u>Az</u> Zip <u>85634</u> Owner Phone <u>(520) 383-5830</u> Fax <u>(520) 383-2218</u>	
LOCATION OF SYSTEM Nearest City <u>Sells, AZ</u> Description or Physical Address <u>Located approximately 36 miles NW of Sells, AZ, on HWY 86 and then 10 miles south on BIA Route 21.</u>			
OPERATOR OF SYSTEM Name <u>Myrtle I. McIntyre, Manager</u> Certified Operator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not required Treatment Certification Level <u>Grade 3</u> Treatment Certification date <u>Expires 03/31/2019</u> Treatment Certification # <u>Operator 004484</u> Treat Certification Authority CA DHS <input type="checkbox"/> ITCA <input type="checkbox"/> AZDEQ <input checked="" type="checkbox"/> NVDEP <input type="checkbox"/> Other <u>Water Lab Analyst</u> Other <u>WW Treatment and WW Collection (Both Grade 4)</u> Copy of Certificate(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Phone (520) 383-5830 Office Number of Employees Full Time <u>25</u> Part Time <u>0</u>		OPERATOR OF SYSTEM Name <u>Vernetto Ramon--Lab Supervisor</u> Certified Operator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not required Treatment Certification Level <u>Level 1</u> Treatment Certification date <u>Expires 04/03/2018</u> Treatment Certification # <u>OP ID 2209 Cert: 3306</u> Treat Certification Authority CA DHS <input type="checkbox"/> ITCA <input checked="" type="checkbox"/> AZDEQ <input type="checkbox"/> NVDEP <input type="checkbox"/> Other <u>Cross connection control-ITCA</u> Other <u>SDWA</u> Copy of Certificate(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Phone Number of Employees Full Time <u>25</u> Part Time <u>0</u>	
SYSTEM STATUS <input checked="" type="checkbox"/> A = Active <input type="checkbox"/> P = Pending (Add New System) <input type="checkbox"/> I = Inactive		SYSTEM CLASS <input checked="" type="checkbox"/> C = Community <input type="checkbox"/> NTNC = Non-Transient Non-Community <input type="checkbox"/> TNC = Transient Non-Community	
Total Service Connections: Residential / Non-Transient: <u>171</u> Transient: <u>8</u> Total Active Connections: Residential / Non-Transient: <u>111</u> Transient: <u>8</u> Service Connections Metered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Percent Metered <u>100 %</u> Rates and Rate Structure <u>\$35.59 + Incr. Rate--see Pages 24-27 of this form.</u> Collection Rate <u>100 %</u>		Resident Population (Number of permanent residents utilizing PWS daily) Summer: <u>~472</u> Winter: <u>~472</u> Non-Transient Population (Number of non-transient persons utilizing PWS daily) Summer: _____ Winter: _____ Transient Population (Number of transient persons served by PWS daily) Summer: _____ Winter: _____	
OWNER TYPE <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> 1 Federal Government <input type="checkbox"/> 2 Private Subdivision, Investor, Trust, Cooperative, Water Association, etc. <input type="checkbox"/> 3 State Government </div> <div> <input type="checkbox"/> 4 Local Government Authority, Commission, District, Municipality, City, etc. <input type="checkbox"/> 5 Mixed Public/Private <input checked="" type="checkbox"/> 6 Native American </div> </div>			
SERVICE AREA CHARACTERISTICS LIST <div style="display: flex;"> <div style="flex: 1;"> <input type="checkbox"/> BR Bar <input type="checkbox"/> CA Casino <input type="checkbox"/> CS Convenience Store <input type="checkbox"/> DC Day Care Center <input type="checkbox"/> DI Dispenser <input type="checkbox"/> HS Head Start <input type="checkbox"/> HA Homeowners Assoc. <input type="checkbox"/> HM Hotel/Motel <input type="checkbox"/> HR Highway Rest Area <input type="checkbox"/> IA Industrial/Agricultural <input type="checkbox"/> IC Interstate Carrier <input type="checkbox"/> IN Institution <input type="checkbox"/> MF Medical Facility <input type="checkbox"/> MH Mobile Home Park <input type="checkbox"/> MU Municipality <input type="checkbox"/> OA Other Area <input checked="" type="checkbox"/> ON Other Non-Transient Area Service Category Description <u>Church, Admin. building, and feast house.</u> </div> <div style="flex: 1;"> <input type="checkbox"/> OR Other Residential Area <input type="checkbox"/> OT Other Transient Area <input type="checkbox"/> PA Recreation Areas <input checked="" type="checkbox"/> RA Residential Area <input checked="" type="checkbox"/> RE Retail Employees <input type="checkbox"/> RS Restaurant <input type="checkbox"/> RV RV Park <input type="checkbox"/> SC School <input type="checkbox"/> SI Sanitary Improvement District <input type="checkbox"/> SK Summer Camp <input type="checkbox"/> SR Secondary Residences <input type="checkbox"/> SS Service Station <input type="checkbox"/> SU Subdivision <input type="checkbox"/> WB Water Bottler <input type="checkbox"/> WH Wholesaler (Sells Water) </div> </div>		Comments: <u>This system is an intertie between Pisinemo and Santa Cruz. There is a small section called "Nesters" between Pisinemo and Santa Cruz that was not included as a separate distribution system because it only includes 3 homes.</u> <u>The PWS is served by two active wells. Each well has its own chlorination unit. The system also has an elevated storage tank. The active wells are numbered as Wells 3 and 4. Wells 1 and 2 are inactive and physically disconnected from the system. An arsenic treatment plant was also installed in 2013.</u> <u>Emmanuelle Rapicavoli, Region 9 EPA, assisted with the survey. Vernetto Ramon and Amber Ramon with TOUA were on site and assisted with the survey. Nick Silides and Pablo Figueroa with the Rural Community Assistance Corporation (RCAC) were on site. Adam Hughes with Indian Health Service (IHS) was also on site.</u>	

SANITARY SURVEY FORM – WATER SYSTEM FACILITIES

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Water System Facilities (WSF) numbers are WSF Type Codes plus an assigned number. (i.e. all facility numbering starts with 001).

TYPE CODES: Ground water = G; Surface Water =S, Purchased S = P; Purchased G = W; GWUDI = Y; Purchased GWUDI=Z—STATUS CODES: Active=A, Inactive =I, Emergency=E, Backup=B, Interim=INT, Abandoned=ABD

A **water source facility** is a well, spring, intake, infiltration gallery or consecutive connections from which a system draws or purchases water:

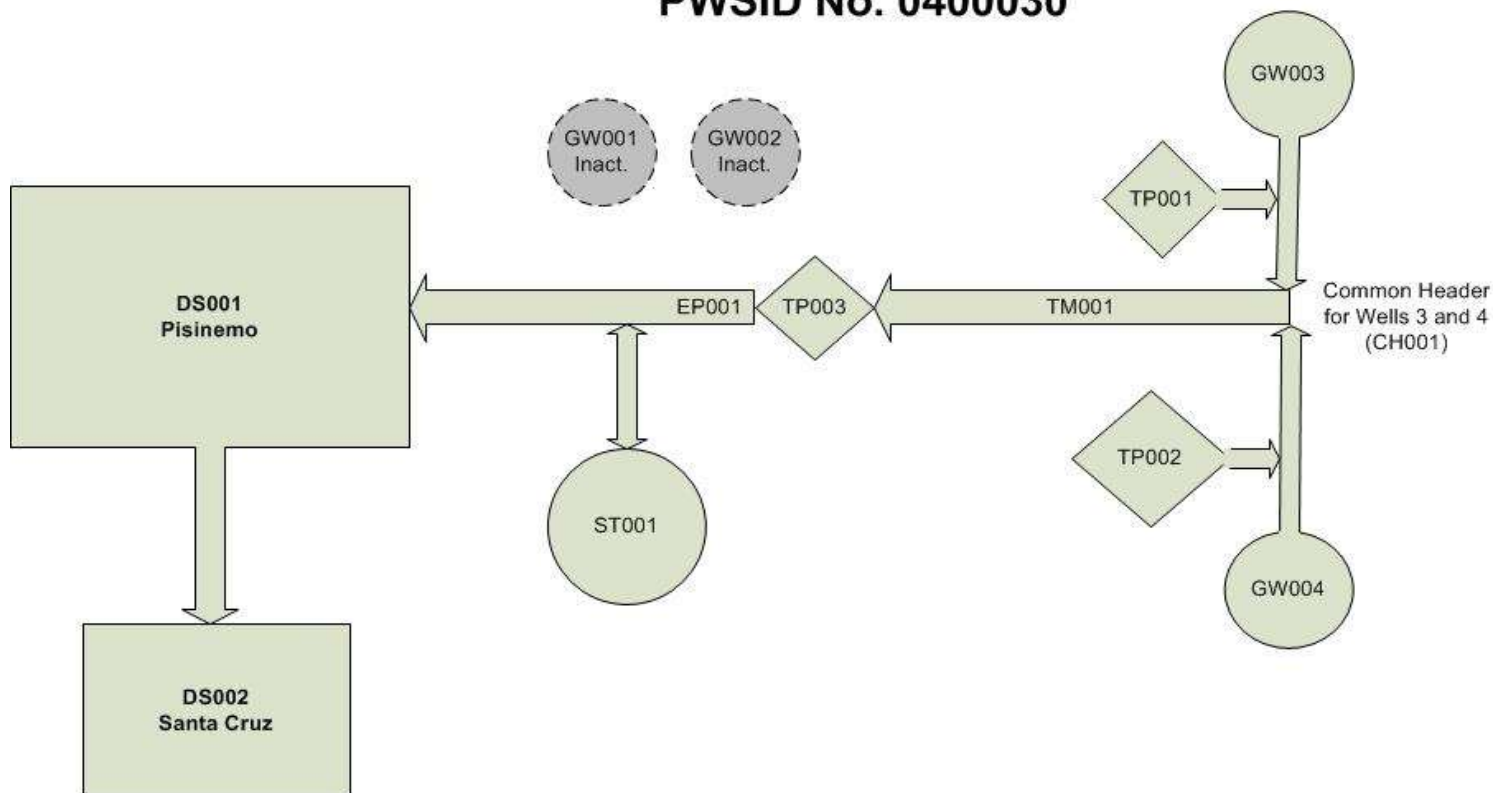
Total Number of Source Facilities 2

WATER SYSTEM FACILITIES SUMMARY (WSF)

WSF ID	Facility Name	Type Code	Seller PWSID	Status/Date	Flows To
GW003	Well 3	G		A/1999	TP001
TP001	Chlorination Unit for Well 3			A/1999	CH001
GW004	Well 4	G		A/1999	TP002
TP002	Chlorination Unit for Well 4			A/1999	CH001
CH001	Common Header for Wells 3 and 4			A/1999	TM001
TM001	Transmission Main to PWS# 0400030 distribution system			A/1999	TP003
TP003	Arsenic Treatment Plant			A/2013	EP001 & ST001
EP001	Entry Point to PWS# 0400030 distribution system			A/1999	ST001 & DS001
ST001	Elevated Storage Tank			A/1999	DS001
DS001	PWS# 0400030 distribution system (Pisinemo)			A/1999	DS002
DS002	PWS# 0400030 distribution system (Santa Cruz)			A/1999	N/A
				/	
GW001	Well 1			I/1999	NA
GW002	Well 2			I/1999	
				/	
				/	
				/	

PISINEMO INTERTIE FLOW SCHEMATIC

Pisinemo Intertie PWSID No. 0400030



Comments: TOUA has several portable generators that could be hooked to any of their systems during an extended power outage.
The 1999 status dates are an estimate of when the two active wells and elevated storage tank were brought online (reportedly soon after the 1999 sanitary survey).

SANITARY SURVEY FORM – WELLS & WELL PUMPS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

(Please copy this sheet for additional wells & pumps)

Source information

WSF ID GW003

Entry Point ID EP001

These are State assigned identification numbers

Source Name Well 3

Name of Source – Example: Well 1 or South well, etc.

Location of Water Source (TRS or street address):

Approximately 4.3 miles southeast of Elevated Storage Tank.

Entry Point Name Entry Point to PWS# 0400030 distribution system

Name of EP – Example: Entry point for North Well 1 & South Well 2

Location of Entry Point Finished water sample tap on panel for arsenic treatment plant.

Source Status: ☒ Perm ☐ Inactive ☐ Backup ☐ Emerg ☐ Interim

☐ Abandoned properly ☐ Other

If interim: _____ to _____

WELL LOG AND TEST DATA

Log Available? ☒ Yes ☐ No

Average Production 18,100 gpd

indicate units

Maximum Production 80 gpm

indicate units

Date Drilled 06/15/1992

if well, date drilled

Casing Size 8-inch steel

size of casing installed in well

Case Depth 500 feet*

depth of casing installed in well

Well Depth 500 feet*

depth of well expressed in feet

Grout Depth 5 to 45 feet

depth of grout used to seal well walls

Log SWL 331.78 feet

(static) expressed in feet below ground elevation

Log PWL 350.43 feet

(pumping) expressed in feet below ground elevation

Test Pump Rate 101 gpm

Intake Type Submersible

type of intake mechanism

Screened Interval 353' to 500' slots

expressed in feet below ground elevation

Well Yield ~101 gpm

pump tested in gallons per minute

REMOVED LAT/LONG INFO

WELLS

Is well site protected from flooding? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)? ☒ Yes ☐ No ☐ Unk ☐ N/A

If no . . explain Cattle free graze in area, but animal density is low.

Does casing extend at least

☒ 18 inches above outside ground level;

☐ 12 inches above finished floor inside well house; and

☒ 3 feet above 100 year flood elevation?

(Check for appropriate distance)

Is top of the well casing properly sealed? (sanitary seal) ☒ Yes ☐ No ☐ Unk ☐ N/A

Is well vented? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is well vent properly screened and terminated in a downward position? ☒ Yes ☐ No ☐ Unk ☐ N/A

Does well have suitable sampling tap? ☒ Yes ☐ No ☐ Unk ☐ N/A

Raw Water

Treated

Are check valves, blow-off valves and water meters maintained and operating properly? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is upper termination of well protected (housed or fenced)? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is intake located below the maximum drawdown? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is there a concrete pad around well head? ☐ Yes ☒ No ☐ Unk ☐ N/A

PRODUCTION WELL DATA

Type 20-hp Grundfos Submersible Pump.

(example: 30 hp line shaft turbine)

Rated Capacity Producing 105 gpm by meter reading taken 11/18/2015.

Yes No Unk N/A

Are pumps operable? ☒ Yes ☐ No ☐ Unk ☐ N/A

When was pump installed? ~2013 ☐ Yes ☐ No ☐ Unk ☐ N/A

Does the system have appropriate redundancy? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is there an appropriate spare parts inventory? ☒ Yes ☐ No ☐ Unk ☐ N/A

Are controls functioning properly and adequately protected? ☒ Yes ☐ No ☐ Unk ☐ N/A

Do underground compartments have a drain? ☐ Yes ☐ No ☐ Unk ☒ N/A

Is facility properly protected against trespassing and vandalism? ☒ Yes ☐ No ☐ Unk ☐ N/A

Are pump records maintained? Note below if appropriate. ☒ Yes ☐ No ☐ Unk ☐ N/A

Is the plumbing adequately painted to prevent excessive corrosion? ☒ Yes ☐ No ☐ Unk ☐ N/A

Are adequate heating, lighting, and ventilation provided? ☒ Yes ☐ No ☐ Unk ☐ N/A

Is a preventive maintenance program in operation? ☒ Yes ☐ No ☐ Unk ☐ N/A

Cross connections observed? ☐ Yes ☒ No ☐ Unk ☐ N/A

Comments: (Such as, detailed information on any items with identified deficiencies)

The information for this well was obtained from the well log, a well information and pump test report, and pump installation report.

*Used pump test depth, which did not include casing height above ground level like the well log did.

Explain Controls: Well pumps are controlled by a pressure transducer at the base of the elevated storage tank and operate based on water levels in the tank. Tank levels and pump operation are monitored by SCADA at the TOUA building in Sells. There is a single phase power line to the wells. Each well has a phase converter. Wells operate together but should alternate to meet As treatment design

Comments: (Such as, detailed information on any items with identified deficiencies)

This well is located in a remote area in the desert.

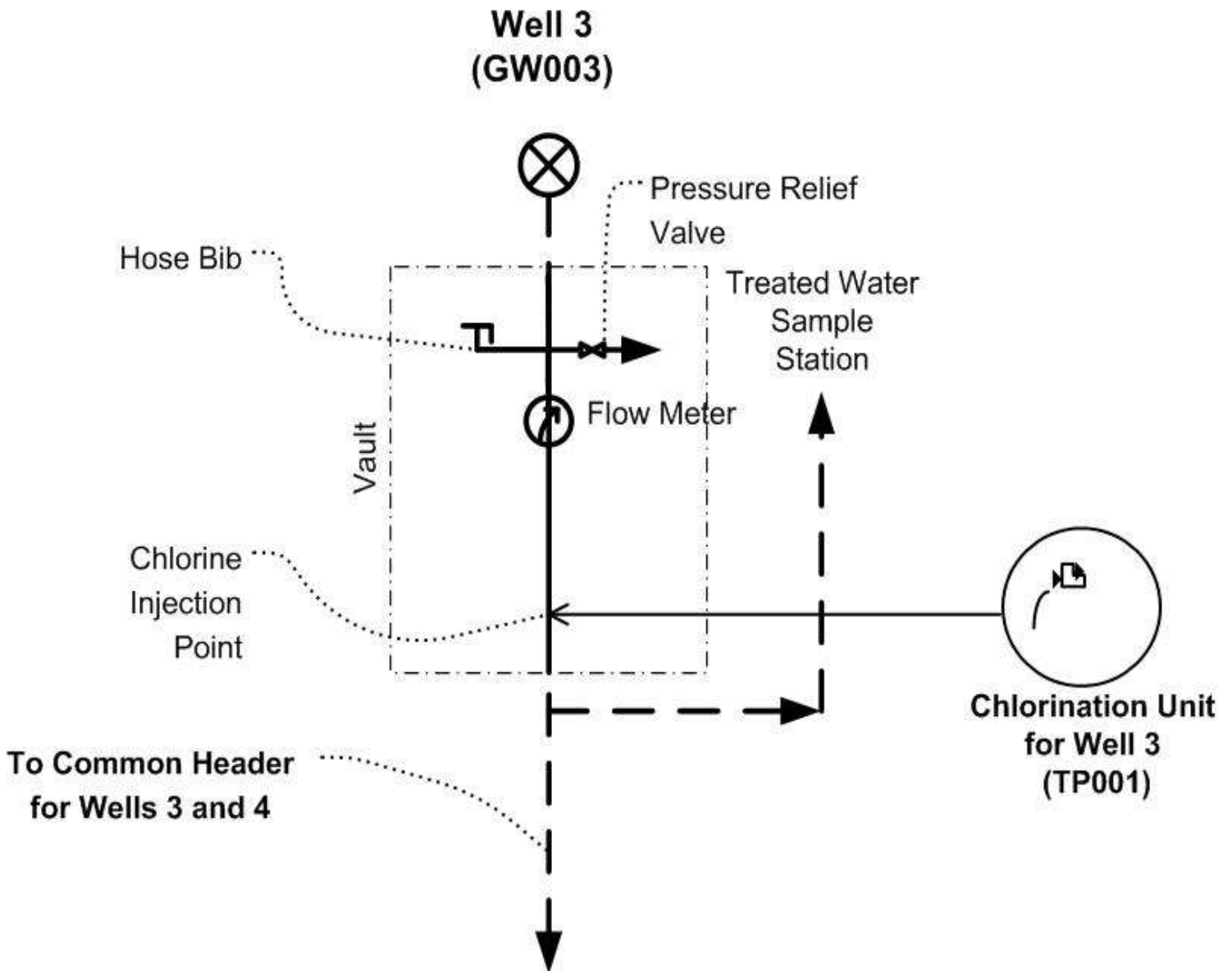
SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Well 3 Schematic



SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030

Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Well 3 Log (not #1 as written on log).

WELL LOG P.L. 86-121

Well Owner: TOUA Home No: 383-2236
Location: 6mi East of the community of Pisinemo #1
Drilled by: Earl H. Williams Well Drilling Date: 6/15/92
Project No: 492-14W Contract No: _____

Depth:	Description of Formation (Specify Water Bearing Aquifers)
0 to 5	Silt and soil
5 to 12	Caliche
12 to 75	Clay and gravel, yellowish brown
75 to 180	Red clay with streaks of sand and gravel
180 to 187	Dark red clay with coarse gravel
187 to 245	Red Conglomerate
245 to 325	Red clay with volcanic gravel
325 to 340	Red clay
340 to 345	Sandy red clay with pea sized gravel
345 to 470	Red clay with gravel, $\frac{1}{2}$ "-1", water at 350
470 to 500	Sticky Red clay

SIZES AND MATERIALS USED

All Depths Measured from Top of Well Casing

Top Casing Line: Nominal I.D. 8" Material A-53 Steel
Depth Cased 0 ft. to 504' 7" Wt/ft 24.7 lbs
Any Reduced Casing Sizes: No Reductions

Grout Envelope: Thickness 1 1/2" in.
Depth Grouted 5 ft. to 45 ft.
Pitless Adapter: Make _____ Model: _____
Depth of Discharge _____ ft. CAP Type _____
Well Screen: Make _____ Material _____
Type _____
Diameter _____ in. Length _____ ft. Slot _____ in.
Depth Screened _____ ft. to _____ ft. Slot _____ in.
_____ ft. to _____ ft. Slot _____ in.
Spacer(s) _____
Fitting at Top _____
Fitting at Bottom _____
Packer Description _____

Gravel or Sand Pack: Material _____
Thickness: _____ in. Depth _____ ft. to _____ ft.

(Attached Gradation Curve)

Total Depth to Bottom of Well 504' 7" ft.)
Total Depth to Bottom of Casing 504' 7" ft.) From Top of Casing
Total Depth to Bottom of Drip Pipe _____ ft.)
Total Depth to Pump Inlet _____ ft.)

PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinimo Intertie

Well 3 Pump Test

**NON-TECHNICAL SUMMARY
PUMP-TEST, PISINIMO #4**

Well Identification: D-16-01-35-cbb (Pisinimo No. 4)

Well #3

Location: The well is 6.5 miles SE of Pisinimo, in Pisinimo District. The well is newly drilled (completed 6-15-92), and was pumped for the first time during this test.

Test Date: Week of June 16, 1992.

Type of Test: A submersible test pump was set, the pump started, and drawdown monitored while the well was pumped at 101 gpm for 24 hours. Samples for chemical analysis were taken several hours into the test. Recovery of water level was monitored for 20 hours after pump shutdown.

Static Water-Level: Current static water level (SWL), measured by electrical sounder, is 331.78 feet below land surface. No previous readings are available for comparison.

Depth and Condition of Well:

SWL = 331.78 feet below land surface

DEPTH = 500 feet below land surface

DIAMETER = 8 inches

SLOTS: 353-500 feet

Static water level was measured by electrical sounder before the test. Other information is from the driller's log.

Drawdown and Potential Yield: After 24 hours of pumping at 101 gpm, total drawdown was 18.65 feet. Water level recovered to within 0.25 foot of its original static level 20 hours after shutting down the pump. Analysis of the test data indicates that if a pump were set with its intake at 448 feet, a 12-hour pumping cycle of 413 gpm (297,500 gal/day) could be sustained.

Chemical Quality: Water was tested for primary and secondary EPA drinking-water inorganics, radionuclides, coliform bacteria, and some additional inorganic constituents related to quality for uses other than drinking. Bacteriological and radionuclides tests were passed without problems. No primary or secondary EPA maximum contaminant levels (MCLs) for drinking water were exceeded.

Quality for irrigation judged from salinity and sodium content is average compared with groundwater from most other parts of the Nation.

SANITARY SURVEY FORM – WELLS & WELL PUMPS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

(Please copy this sheet for additional wells & pumps)

Source information	WELL LOG AND TEST DATA	
<p>WSF ID <u>GW004</u> Entry Point ID <u>EP001</u> <small>These are State assigned identification numbers</small></p> <p>Source Name <u>Well 4</u> <small>Name of Source – Example: Well 1 or South well, etc.</small></p> <p>Location of Water Source (TRS or street address): <u>Approximately 0.1 miles southeast of Well 3</u></p> <p>Entry Point Name <u>Entry Point to PWS# 0400030 distribution system</u> <small>Name of EP – Example: Entry point for North Well 1 & South Well 2</small></p> <p>Location of Entry Point <u>Finished water sample tap on panel for arsenic treatment plant.</u></p> <p>Source Status: <input checked="" type="checkbox"/> Perm <input type="checkbox"/> Inactive <input type="checkbox"/> Backup <input type="checkbox"/> Emerg <input type="checkbox"/> Interim <input type="checkbox"/> Abandoned properly <input type="checkbox"/> Other If interim: _____ to _____</p>	<p>Log Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Average Production <u>18,100 gpd</u> <small>indicate units</small></p> <p>Maximum Production <u>150 gpm</u> <small>indicate units</small></p> <p>Date Drilled <u>09/22/1992</u> <small># well. . date drilled</small></p> <p>Casing Size <u>8-inch steel</u> <small>size of casing installed in well</small></p> <p>Case Depth <u>505 feet</u> <small>depth of casing installed in well</small></p> <p>Well Depth <u>505 feet</u> <small>depth of well expressed in feet</small></p> <p>Grout Depth <u>5 to 45 feet</u> <small>depth of grout used to seal well walls</small></p>	<p>Log SWL <u>335.87 feet</u> <small>(static) expressed in feet below ground elevation</small></p> <p>Log PWL <u>349.21 feet</u> <small>(pumping) expressed in feet below ground elevation</small></p> <p>Test Pump Rate <u>101.1 gpm</u></p> <p>Intake Type <u>submersible</u> <small>type of intake mechanism</small></p> <p>Screened Interval <u>365' to 501' slots</u> <small>expressed in feet below ground elevation</small></p> <p>Well Yield <u>~101 gpm</u> <small>pump tested in gallons per minute</small></p> <p>REMOVED LAT/LONG INFO</p>

WELLS	PRODUCTION WELL DATA
<p>Is well site protected from flooding? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is well protected from potential sources of pollution (includes: surface water, known chemical spills, agricultural use, etc.)? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>If no . . explain <u>Cattle grazing in area, but animal density is low.</u></p> <p>Does casing extend at least <input checked="" type="checkbox"/> 18 inches above outside ground level; <input type="checkbox"/> 12 inches above finished floor inside well house; and <input checked="" type="checkbox"/> 3 feet above 100 year flood elevation? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A <small>(Check for appropriate distance)</small></p> <p>Is top of the well casing properly sealed? (sanitary seal) <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is well vented? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is well vent properly screened and terminated in a downward position? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Does well have suitable sampling tap? Raw Water <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Treated <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Are check valves, blow-off valves and water meters maintained and operating properly? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is upper termination of well protected (housed or fenced)? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is intake located below the maximum drawdown? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is there a concrete pad around well head? <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p>	<p>Type <u>20-HP Grundfos Submersible Pump.</u> <small>(example: 30 hp line shaft turbine)</small></p> <p>Rated Capacity <u>92 gpm measured 11/18/2015.</u></p> <p>Are pumps operable? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>When was pump installed? <u>09/14/2011 New motor.</u> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Does the system have appropriate redundancy? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is there an appropriate spare parts inventory? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Are controls functioning properly and adequately protected? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Do underground compartments have a drain? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Yes No Unk N/A</p> <p>Is facility properly protected against trespassing and vandalism? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Are pump records maintained? Note below if appropriate. <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is the plumbing adequately painted to prevent excessive corrosion? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Are adequate heating, lighting, and ventilation provided? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Is a preventive maintenance program in operation? <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p> <p>Cross connections observed? <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Yes No Unk N/A</p>

Comments: (Such as, detailed information on any items with identified deficiencies)
The information for this well was obtained from the well log, a well information and pump test report, and pump installation report. Some of this information was not available for the previous sanitary survey, so some of the well construction data has changed.
The discharge piping and appurtenances for this well were brought out of the vault and are now above ground. The pitless unit installation on the wellhead was retained.

Explain Controls: Well pumps are controlled by a pressure transducer at the base of the elevated storage tank and operate based on water levels in the tank. Tank levels and pump operation are monitored by SCADA at the TOUA building in Sells. There is a single phase power line to the wells. Each well has a phase converter. Wells operate together but should alternate to meet As treatment design.

Comments: (Such as, detailed information on any items with identified deficiencies)
This well is located in a remote area in the desert.

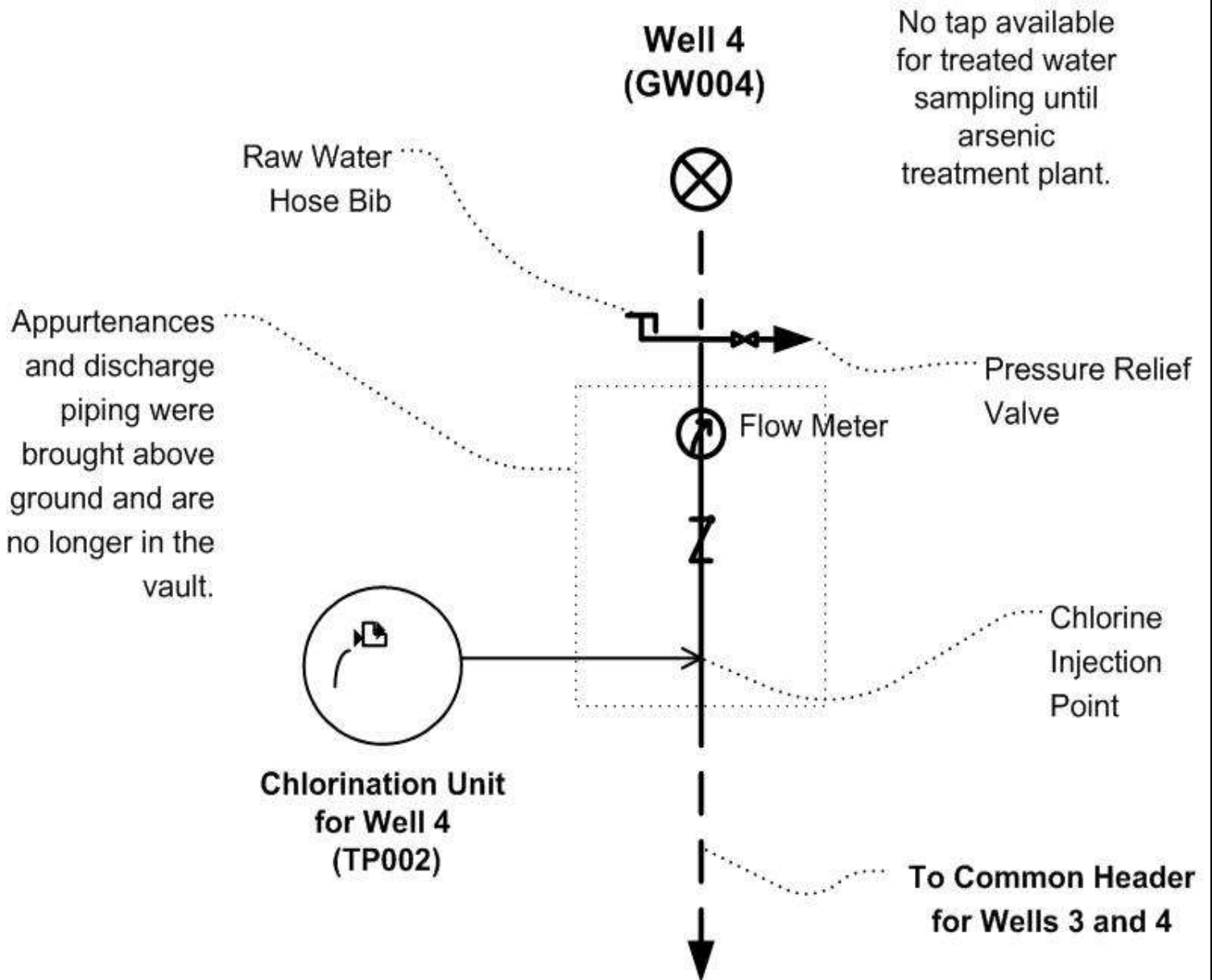
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SYSTEM NAME Pisinemo Intertie

Well 4 Schematic



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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Well 4 Log (not Well #2 as written on log).

WELL LOG P.L. 86-121

Well Owner: TOUA Home No: 383-2236
Location: 6mi East of community of Pisinimo Well #2
Drilled by: Earl H. Williams Well Drilling Date: 9/22/92
Project No: 492-14W Contract No: _____

Depth:	Description of Formation (Specify Water Bearing Aquifers)
0 to 4	Gravel and silt
4 to 80	pink clay and gravel
80 to 125	brown clay
125 to 215	red to pink clay and gravel
215 to 280	red sandy clay
280 to 405	brown clay with streaks of gravel
405 to 455	brown clay with streaks of loose gravel
455 to 460	brown clay
460 to 470	clay and gravel
470 to 480	hard clay and sand
480 to 503	clay and small gravel

SIZES AND MATERIALS USED

All Depths Measured from Top of Well Casing

Top Casing Line: Nominal I.D. 8" Material A-53 Steel
Depth Cased 0 ft. to 506'10" ft. Wt/ft 24.7 lbs
Any Reduced Casing Sizes: No Reductions

Grout Envelope: Thickness 1 1/2 in.
Depth Grouted 5 ft. to 45 ft.

Pitless Adapter: Make _____ Model: _____
Depth of Discharge _____ ft. CAP Type _____

Well Screen: Make _____ Material _____
Type _____
Diameter _____ in. Length _____ ft. Slot _____ in.
Depth Screened _____ ft. to _____ ft. Slot _____ in.
_____ ft. to _____ ft. Slot _____ in.

Spacer(s) _____
Fitting at Top _____
Fitting at Bottom _____
Packer Description _____

Gravel or Sand Pack: Material _____
Thickness: _____ in. Depth _____ ft. to _____ ft.

(Attached Gradation Curve)

Total Depth to Bottom of Well 505 ft.)
Total Depth to Bottom of Casing 506'10" ft.) From Top of Casing
Total Depth to Bottom of Drip Pipe _____ ft.)
Total Depth to Pump Inlet _____ ft.)

PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Well 4 Pump Test Information

Well Test Report, Pisinimo No. 5

**NON-TECHNICAL SUMMARY
PUMP-TEST, PISINIMO No. 5**

Well Identification: D-16-1-35-bcb (Pisinimo No. 5)

Location: The well is 7.0 miles SE of Pisinimo, in Pisinimo District. The well is newly drilled (completed 9-22-92), and was pumped for the first time during this test.

Test Date: Week of October 20, 1992.

Type of Test: A submersible test pump was set, the pump started, and drawdown monitored while the well was pumped at 101.1 gpm for 24 hours. Samples for chemical analysis were taken several hours into the test. Recovery of water level was monitored for 23 hours after pump shutdown.

Static Water-Level: Current static water level (SWL), measured by electrical sounder, is 335.87 feet below land surface. No previous readings are available for comparison.

Depth and Condition of Well:

SWL = 335.87 feet below land surface
DEPTH = 501 feet below land surface
DIAMETER = 8 inches
SLOTS: 365-501 feet

Static water level and well depth were measured by electrical sounder before the test. Other information is from the driller's log.

Drawdown and Potential Yield: After 24 hours of pumping at 101.1 gpm, total drawdown was 13.34 feet. Water level recovered to within 0.24 foot of its original static level 23 hours after shutting down the pump. Analysis of the test data indicates that if a pump were set with its intake at 450 feet, a 12-hour pumping cycle of 478.9 gpm (344,808 gal/day) could be sustained.

Chemical Quality: Water was tested for primary and secondary EPA drinking water inorganics, radionuclides, and some additional inorganic constituents related to quality for uses other than drinking. The radionuclides test was passed without any problems, and no primary or secondary EPA maximum contaminant levels (MCLs) for drinking water were exceeded.

Quality for irrigation judged from salinity and sodium content is average compared with groundwater from most other parts of the Nation.

SANITARY SURVEY FORM - TREATMENT

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Treatment Objective

B = Disinfection Byproduct Control
C = Corrosion Control
D = Disinfection
E = Dechlorination
F = Iron Removal
I = Inorganics Removal
M = Manganese Removal
N = No Treatment at Source
O = Organics Removal
P = Particulate Removal
R = Radionuclides Removal
S = Softening (Hardness Removal)
T = Taste / Odor Control
Z = Other _____

Treatment Codes

(See separate sheet of Treatment Codes)

WATER TREATMENT FACILITIES

WSF ID Treatment Plant Name Treatment Objective and Code

TP001	Chlorination Unit for Well 3	D421	_____	_____
TP002	Chlorination Unit for Well 4	D421	_____	_____
TP003	Arsenic Treatment Plant	I999	R345*	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Treatment Description / Comments: Treatment at the wellheads consists of sodium hypochlorite injection in the discharge piping following each wellhead. A 12.5% hypochlorite solution is diluted with water at 5 gallons sodium hypochlorite with 25 gallons water for both chlorination units. The chlorinated water then goes to an adsorptive iron media (located within fenced area with elevated storage tank) for arsenic and uranium removal. *The treatment objective for uranium removal here is rapid sand filtration. The mechanism or effectiveness for uranium removal with iron adsorptive media could not be determined for this survey.

CHLORINATION UNIT FOR WELL 3 (TP001)

Yes No Unk N/A

What disinfectant is used? Sodium hypochlorite

Is the disinfectant used NSF approved? ☒ ☐ ☐ ☐

Is the amount of disinfectant used recorded? ☒ ☐ ☐ ☐

If Yes, amount used: _____ lbs/day ~1.0 ppm _____ other (give units)

Is the amount of disinfectant used compared to water pumped to verify concentration? ☐ ☒ ☐ ☐

Is chemical storage adequate and safe? ☒ ☐ ☐ ☐
If No, explain _____

Is disinfectant residual monitored at same time/place as coliform samples are collected? ☒ ☐ ☐ ☐

Are residual reports submitted monthly? ☒ ☐ ☐ ☐

Is the disinfection equipment being operated and maintained properly? ☒ ☐ ☐ ☐

Is operational standby equipment provided? ☒ ☐ ☐ ☐

If not, are critical spare parts on hand? ☒ ☐ ☐ ☐

Has disinfection system been free from failure during the past year – no interruption? ☐ ☐ ☒ ☐

If No, give dates of interruptions _____

CT available 80 minutes 0.025mg/L 2mg•min/L

Residual ☒ Free ☐ Combined

Describe provisions for providing contact time between disinfection point and the first point of use: ~24,200' of 4" PVC pipe to first customer.

Measured chlorine residual: 0.94 mg/L Location(s): Pisinemo Rec. Center.

CHLORINATION UNIT FOR WELL 4 (TP002)

Yes No Unk N/A

What disinfectant is used? Sodium hypochlorite

Is the disinfectant used NSF approved? ☒ ☐ ☐ ☐

Is the amount of disinfectant used recorded? ☒ ☐ ☐ ☐

If Yes, amount used: _____ lbs/day ~1.0 ppm _____ other (give units)

Is the amount of disinfectant used compared to water pumped to verify concentration? ☐ ☒ ☐ ☐

Is chemical storage adequate and safe? ☒ ☐ ☐ ☐
If No, explain _____

Is disinfectant residual monitored at same time/place as coliform samples are collected? ☒ ☐ ☐ ☐

Are residual reports submitted monthly? ☒ ☐ ☐ ☐

Is the disinfection equipment being operated and maintained properly? ☒ ☐ ☐ ☐

Is operational standby equipment provided? ☒ ☐ ☐ ☐

If not, are critical spare parts on hand? ☒ ☐ ☐ ☐

Has disinfection system been free from failure during the past year – no interruption? ☐ ☐ ☒ ☐

If No, give dates of interruptions _____

CT available 80minutes 0.025mg/L 2mg•min/L

Residual ☒ Free ☐ Combined

Describe provisions for providing contact time between disinfection point and the first point of use: ~24,200' of 4" PVC pipe to first customer.

Measured chlorine residual: 1.13 mg/L Location(s): Home in Santa Cruz.

FOR LIQUID HYPOCHLORINATION

Pump model: 1.03 gph ProMinent ConceptPlus pump.

Settings: Stroke 70

Speed 50

Vat Size: Two 30-gallon tanks.

Solution Strength: 2.1%

FOR LIQUID HYPOCHLORINATION

Pump model: 1.03 gph ProMinent ConceptPlus pump.

Settings: Stroke 47

Speed 50

Vat Size: Two 30-gallon tanks.

Solution Strength: 2.1%

SANITARY SURVEY FORM - WATER TREATMENT PLANTS

(Other Than Direct and Conventional SW Plants)

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Type: ☒ Other (describe in detail) Arsenic Treatment Plant (TP003) for Wells 3 and 4. Sampling for design purposes showed total arsenic levels of 10 ppb and 11 ppb for Wells 3 and 4 respectively. The MCL for arsenic is 10 ppb. Finished water arsenic samples averaged quarterly for the year 2015 resulted in 3.1 ppb following treatment. The treatment plant was installed and began operation in 2013. The plant was installed by Hennesy Mechanical Sales, which has installed other similar arsenic treatment plants for TOUA. The plant is located in a building within the same fenced area as the elevated storage tank (ST001). This site also has elevated uranium that has been above the MCL. The Hennesy design material in the O&M manual indicate that, "iron based media is known to remove uranium at varying efficiencies based on site-specific water quality, although limited historical data exists." The raw and finished water sampling for the Pisinemo Intertie shows great fluctuation in uranium removal and actually shows some significant uranium increases between raw and finished water in two of the samples. The arsenic adsorptive media used in the Severn Trent Services treatment plant at this site--Bayoxide SORB E-33--does not appear intended for uranium removal according to manufacturer literature. Media typically used for arsenic and uranium removal is discussed as a hybrid ion-exchange technology in available literature, and consists of an, "anion exchange resin impregnated with hydrous iron oxide nano-particles."

Peak instantaneous flow experienced: ~197 gpm with wells operating together if there is no bypass. Records indicate that they were bypassing at 60% of the flow, but that they had stopped blending 6/13/14. The blending amounts may have changed since that date, but were not seen in the records.

Design was for 90 gpm according to Hennesy manual.

Chemicals Added	Points of Application	Purpose	Feed Rate (range)
1) Sodium hypochlorite	Discharge piping following wells	Disinfection	~1.0 ppm
2) _____	_____	_____	_____

What is the purpose of treatment? Arsenic removal plant and disinfection with sodium hypochlorite. Arsenic (III) was non-detect in both wells.

What is the process control strategy? The process uses granular iron oxide treatment primarily for arsenic adsorption. Testing did not indicate As III in the raw water, but the system provides pre-chlorination that would provide both oxidation and disinfection. The design also states that iron based media can remove uranium at various efficiencies. TOUA samples for both arsenic and uranium at this site. They see uranium breakthrough well before arsenic.

Who makes process control decisions and how are they made? Process control decisions for operation were initially made by Hennesy during the setup and now by TOUA operators to maintain arsenic levels below the MCL. TOUA operators are also attempting to use the treatment for uranium removal.

Process Monitoring:

Arsenic and uranium sampling is completed to show that the treatment is working. Chlorine residuals are taken to ensure adequate disinfection.

Describe the unit processes:

- Chlorination--liquid sodium hypochlorite is injected in the discharge piping following Wells 3 and 4. The design output is for a flow rate of 90 gpm.
- Chlorinated water then goes through two granular iron oxide vessels in parallel. Hennesy documentation states operating in parallel is more cost effective for systems with arsenic levels less than 30 ppb.
- Arsenic Adsorption-- Bayoxide SORB E-33 media is used to provide chemisorption (irreversible adsorption) with the arsenic as the water containing the arsenic is held in contact with the adsorptive media. Generally, three to five minutes of contact time is adequate for arsenic removal. The adsorptive media has a varying adsorptive capacity dependent on the raw water characteristics, including pH, competing constituents (e.g., silica, sulfide, phosphate, etc.), the arsenic level, and the speciation of arsenic (As V is more easily removed than As III). When the media adsorptive capacity is used up, the media will need to be replaced. The adsorptive media is periodically backwashed to prevent channeling or plugging of the media and to redistribute media within the bed. The backwash is manual. Backwash water goes to a 2,600-gallon polyethylene storage tank. The backwash water settles for a minimum of 24 hours in the tank and the water is decanted to the head of the arsenic treatment plant at a low flow rate.

Filters: ☐ Yes ☒ No—Iron adsorptive media in pressure vessels.

Type: ☐ Green Sand ☐ Dual Media ☐ Multi-media ☒ Other (describe) Arsenic treatment-iron adsorptive media.

Depth of each medium: 3.2 feet media depth with a 6-foot sidewall and 3-foot diameter treatment vessel (2).

Surface wash? ☐ Yes ☒ No If Yes, type: NA Air scour? ☐ Yes ☒ No

Disinfection/Oxidation (describe): Chlorination for disinfection (see above).

Is CT adequate under all conditions of flow, temperature and pH? ☒ Yes ☐ No ☐ Unk

Explain: CT for this system would be significant.

Comments on process control and finished water quality: Samples taken quarterly averaged 2.6 ppb for 2015 for arsenic and 27.7 ppb for uranium; however, the running annual average for the first quarter of 2016 uranium sampling exceeded the MCL of 30 ppb with a result of 31.7 ppb.

Comments of equipment condition and adequacy of emergency back-up equipment: The system appears to be operating well for the removal of arsenic. The removal efficiency for uranium is difficult to predict with the sample results taken since 2014, however. TOUA operators have a manual at the site and the office; additionally, they are keeping track of flows and pressures through the treatment vessels and backwash dates and volumes with the data kept at the site. The dates of media change-out are also kept on-site. The tanks were last backwashed 03/10/2016.

It is recommended that TOUA work with RCAC to develop standard operating procedures (SOP's) for this system. A manual should be developed and updated to determine the best practices for operation to remove both uranium and arsenic. Additionally, it is reported that both wells operate at the same time. This would result in design flows significantly above the arsenic treatment design and empty bed contact times much less than is recommended for arsenic removal. Information from Hennesy indicates the single vessel arsenic treatment plant was designed for a flow rate of 90 gpm and an empty bed contact time (EBCT) of 3.66 minutes with a media volume of 44 cubic feet. Flow measurements taken 11/18/2016 for Wells 3 and 4 are 105 gpm and 92 gpm. Both wells reportedly operate simultaneously based on water levels in the elevated storage tank. If the flows are added, the EBCT is 1.67 minutes with no bypass. It is recommended that the plant be operated in accordance with the design and the wells alternate operation.

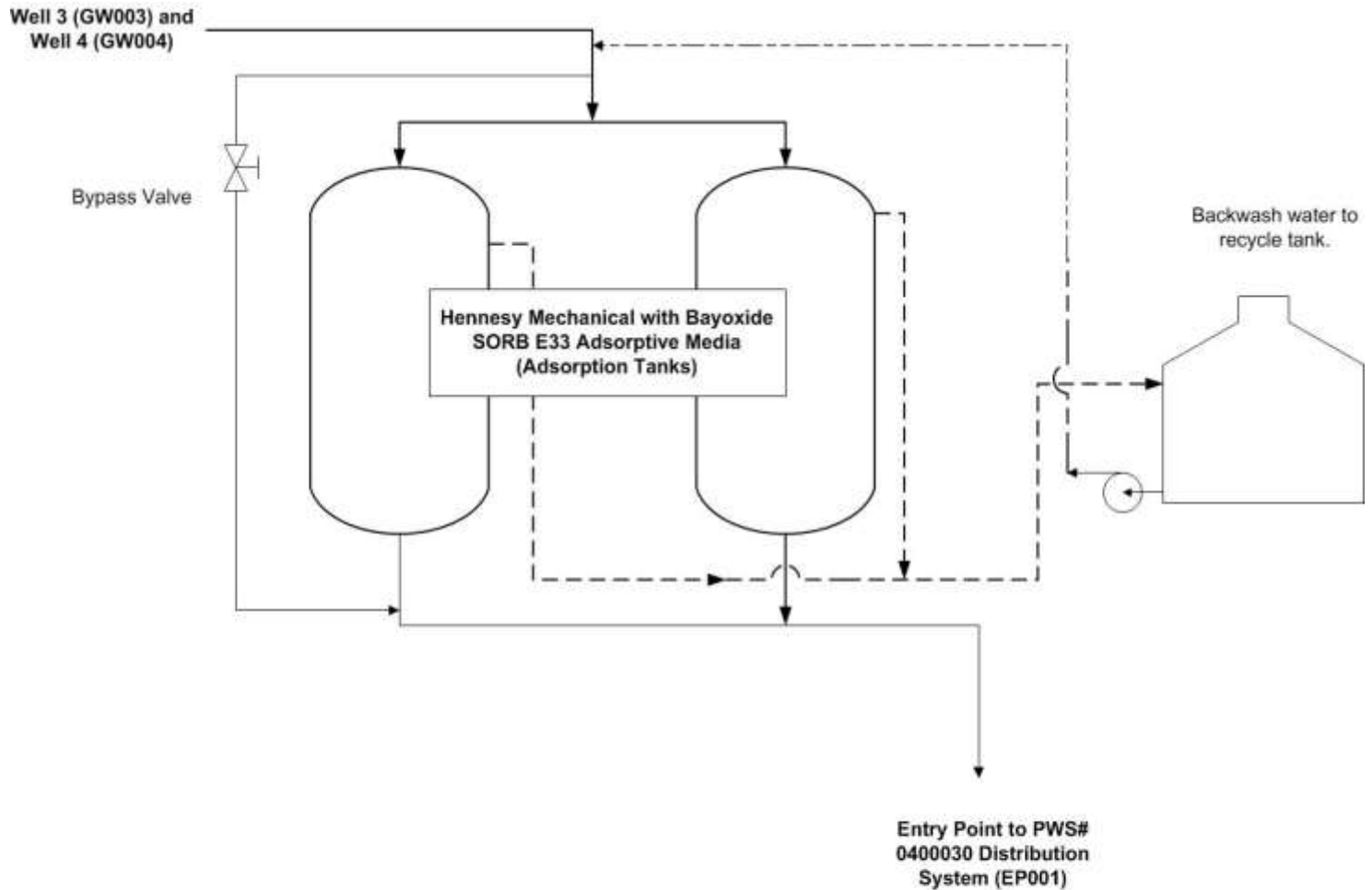
SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Inertie

Arsenic Treatment Plant (TP003) Schematic



Pisinemo Inertie PWS ID No. 0400030

Arsenic Treatment Plant (TP003): Hennesy Mechanical
Arsenic Treatment Plant using Bayoxide SORB E33 iron
adsorptive media.

Schematic is not to scale.

SANITARY SURVEY FORM - DIAGRAMS

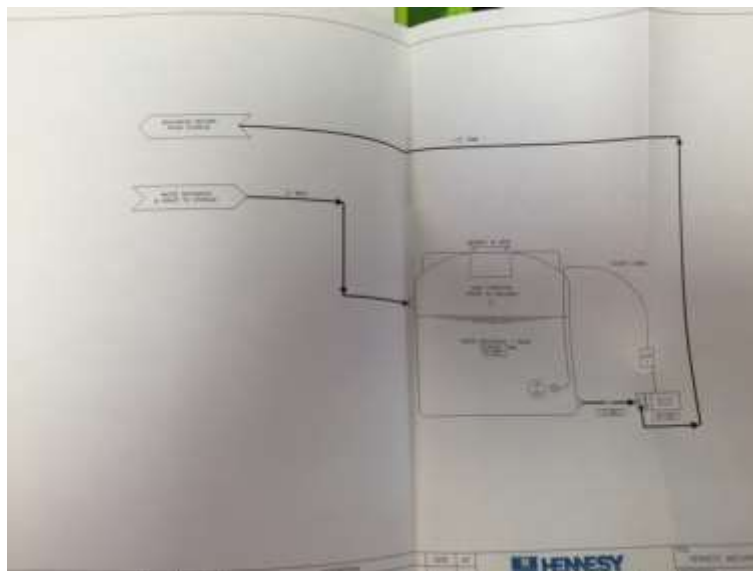
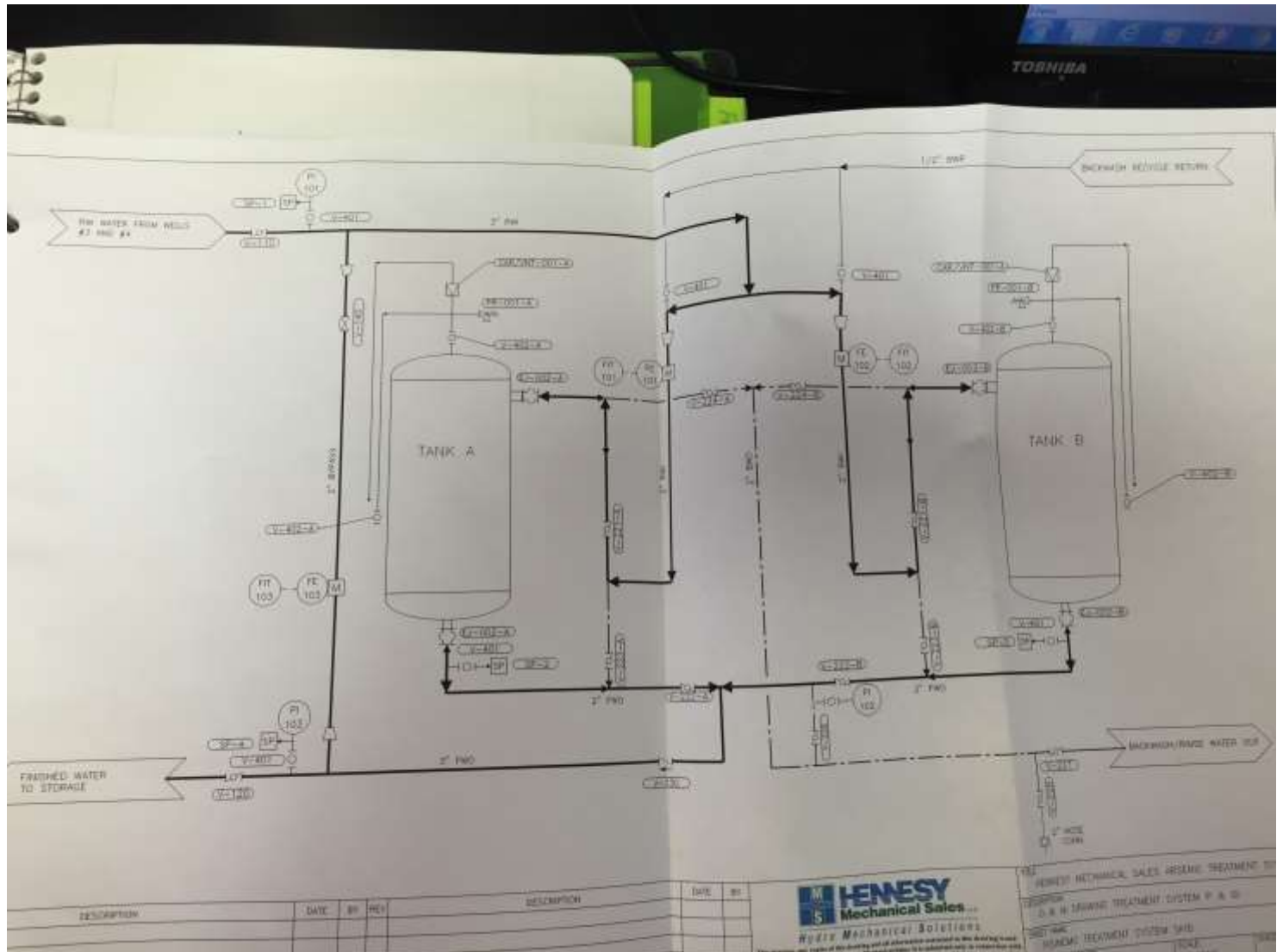
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Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Arsenic Treatment Plant (TP003) plan sheet photos.



SANITARY SURVEY FORM - STORAGE

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

COMPLETE ONE SECTION FOR EACH STORAGE FACILITY (each tank has a WSF ID #)

How much **TOTAL** treated storage is provided? 125,000 gallons Is all treated water covered? ☒ Yes ☐ No

Total number of days of supply? >3 days

Comments: _____

STORAGE FACILITY

WSF ID ST001 Location, Description Elevated Storage Tank. Storage tank is located approximately 1,970 feet east of BIA Route 21 in Pisinemo, AZ.

Storage Volume? 125,000 gallons

Dimensions: Base @ 99' 9" from ground and overflow @ 124' 6"

Year constructed: 1996

Material: ☐ Bolted steel ☒ Welded steel ☐ Concrete ☐ Other

Yes No Unk N/A

Does surface runoff and underground drainage drain away? ☒ ☐ ☐ ☐

Is the site protected against flooding? ☒ ☐ ☐ ☐

Is the site protected against trespass/vandalism? ☒ ☐ ☐ ☐

Condition: ☒ Good ☐ Fair ☐ Poor

Describe piping (e.g. floats on line): Floats on line.

Foundation: ☐ Slab ☐ Ring ☒ Other

Ladders caged and locked? ☒ ☐ ☐ ☐

Ladder material: Steel

Internal ladder? Yes--steel

Are overflow lines, air vents, drainage lines or clean out pipes turned downward or covered, screened and terminated a minimum of 3 diameters above the ground or storage tank surface? ☒ ☐ ☐ ☐

Overflow pad? ☒ ☐ ☐ ☐

Erosion? ☐ ☒ ☐ ☐

Working and accurate target? ☐ ☒ ☐ ☐

Sealed and locked shoe-box hatch? ☐ ☒ ☐ ☐

Are surface coatings in contact with water ANSI / NSF approved? ☒ ☐ ☐ ☐

Is tank protected against icing and corrosion? ☒ ☐ ☐ ☐

Can tank be isolated from system? ☒ ☐ ☐ ☐

Is all treated water storage covered? ☒ ☐ ☐ ☐

What is cleaning frequency for tanks? No established frequency

Date tank was last cleaned? Not cleaned.

Are tanks disinfected after repairs are made? ☒ ☐ ☐ ☐

Comments: The main access hatch with the interior access ladder is bolted shut. This hatch fits tightly, but it does not appear to be gasketed. The secondary access hatch (opened during survey) consists of a flat plate hatch over the top of the vent opening. This hatch is locked and appears to fit fairly tightly, but is also not equipped with a gasket.

The target mechanism is not working. The opening between the target cable conduit and the target cable is large enough to allow entry of insects. There were no insects seen in the tank, however.

(Include safety and security concerns)

Elevated Storage Tank (ST001)



Nameplate



SANITARY SURVEY FORM - MISCELLANEOUS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisenemo Intertie

DISTRIBUTION SYSTEM EVALUATION

System description PVC and AC pipe ranging in size from 2-, 3-, 4- and 6-inch. The 3-inch pipe is AC (minimal AC pipe in the distribution system), and the rest of the pipe is PVC.

Feet of mains? 11,470 feet of distribution piping in the communities. Estimate approximately 24,200 feet of 4-inch PVC transmission pipe between Well 3 and the Pisenemo distribution system, and there are approximately 19,800 feet of 4-inch PVC pipe between the Pisenemo distribution system and the Santa Cruz distribution system. (Using Google Earth™ measuring tool to estimate distances).

Condition of mains? Transmission is Good. Distribution is good.

Date of installation of mains? Unknown for much of distribution piping and around 1999 for transmission piping.

System drawings available? ☒ Yes ☐ No ☐ Unk ☐ N/A

As-built drawings? ☒ Yes ☐ No ☐ Unk ☐ N/A

Date 1990 with updates in 1995, 1998, and 2001.

Drawing on-site? ☒ Yes ☐ No ☐ Unk ☐ N/A

Lines adequately sized? ☒ Yes ☐ No ☐ Unk ☐ N/A

Adequate pressure maintained? ☒ Yes ☐ No ☐ Unk ☐ N/A

Mains protected from freezing? ☒ Yes ☐ No ☐ Unk ☐ N/A

Distribution system free of leaks? ☒ Yes ☐ No ☐ Unk ☐ N/A

Fire hydrants? ☒ Yes ☐ No ☐ Unk ☐ N/A

Dead end lines eliminated? ☐ Yes ☒ No ☐ Unk ☐ N/A

Flushing program? ☐ Yes ☒ No ☐ Unk ☐ N/A

Pressure reducing stations? Number 1 ☒ Yes ☐ No ☐ Unk ☐ N/A

Booster stations? Number ☐ Yes ☒ No ☐ Unk ☐ N/A

Connections to other PWSs? ☐ Yes ☒ No ☐ Unk ☐ N/A

If Yes, please describe:

Check one: ☐ No cross-connections were observed.

☒ Cross-connections were observed. Describe below.

Comments: The system has air relief valves in the transmission lines. These valves are installed in small vaults below grade. The air relief piping does not extend above ground, which would make a potential cross-connection if the vault flooded; however, TOUA does not wish to extend the piping above ground. During previous surveys, it was explained that these vaults were often found and vandalized by illegal border crossers looking for water (the border crossers would break the valves off, which breaks the transmission line and would be a hazard for the water system due to depressurization of the transmission and distribution mains).

It was also noted during this sanitary survey that vehicles are running over the valve vaults near the roadways going to the wells. At one vault, it appeared an ATV had purposely run over a marked valve vault and broken the vault casing and lid. Protective bollards and more robust valve vaults (e.g., cast iron with locking lids) should be considered to provide protection. Additionally, TOUA should work towards proper backflow protection of automatic air relief valves in all of their systems where these valves are used. Val-Matic Floodsafe valves are now available for systems where the relief piping is kept below grade. The use of more robust valve vaults with locking lids would also be of benefit.

There is one pressure reducing valve on the line between Pisenemo and Santa Cruz/Nesters. The valves need adjustment or repair, as the pressure reading at a home in Santa Cruz was over 100 psi.

SAFETY

Check one: ☐ No confined spaces were observed.
☒ Confined space(s) were observed.

Describe any confined spaces observed Storage tank would be considered a confined space if entered for cleaning. TOUA has a comprehensive safety program that includes confined space training.

Confined space safety adequate? ☒ Yes ☐ No

Check one: ☐ No fall risks were observed.
☒ Fall risks were observed.

Describe any fall risks observed Elevated Storage Tank (ST001) would be a fall hazard. The access ladder is equipped with a cage and climbing safety cable. Additionally, the base of the ladder has a locking cover, and the storage tank area is fenced. TOUA has climbing safety equipment.

Note any other safety deficiencies (consider items such as ladders, tank supports, guards on rotating electrical equipment, wiring problems, etc.)

TOUA has a comprehensive safety program that includes confined space entry training.

Randy Cook, a safety officer for TOUA, was hired by TOUA in early 2015 to establish safety policies. Vernetto Ramon is working on a safety plan for the TOUA Water & Wastewater Department.

SANITARY SURVEY FORM - MISCELLANEOUS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

MONITORING AND RECORDKEEPING EVALUATION

Yes No Unk N/A

Bacti Sample Site Plan submitted? ☒ ☐ ☐ ☐

Where are bacti samples collected? See comments below.

Familiar with repeat sampling? ☒ ☐ ☐ ☐

Bacti records kept appropriately? (5 years) ☒ ☐ ☐ ☐

Where are chem./rad samples collected? See comments below.

Chemical monitoring records maintained? (10 years) ☒ ☐ ☐ ☐

Other Records

Disinfection Profile (if required)? ☒ N/A ☐ Yes ☐ No
Stage 1 Monitoring plan? ☐ N/A ☒ Yes ☐ No
Sanitary surveys? ☒ Yes ☐ No
Other? Various ☒ Yes ☐ No

Comments: All water quality reports are maintained for ten years. Records for each system are kept in separate books. A SEMS software program keeps track of water quality and maintenance for each of the TOUA water systems.

TOUA laboratory has developed a Water Quality Control Laboratory 2015 Sampling Plan report that was updated in April 2015. This report has been updated for 2016 and is in the review process. This document outlines procedures to be followed for sample collection, handling, and chain of custody. Each TOUA PWS is identified in the plan, and each sampling plan has been submitted to Region 9 EPA for approval.

The TOUA has developed four sampling routes: east, north, south, and west. Previously, the routing schedule identified a sample rotation for the system but did not specifically identify a sampling site; however, Vernetto Ramon is working to identify sample sites by housing location numbers and locating these sites on Google Earth and TOUA village maps. The bacteriological samples will then be obtained from different approved sites for each system each month, as required by the Revised Total Coliform Rule (RTCR).

The geographic sampling routes noted above are used to divide the costs and timing of chemical and radiological sampling, e.g., TOUA would collect VOC samples in the west route one year and another route the next year.

Chemical and radiological samples for the Pisinemo Intertie are obtained from sample taps on the control panel of the arsenic treatment plant.

At the joint TOUA, IHS, EPA, and RCAC meeting in March 2016, EPA presented TOUA with a template Comprehensive Sample Site Plan (CSSP) that would comply with the requirements of the RTCR, GWR, LCR and D/DBPR. At that meeting, RCAC confirmed that they were available to assist TOUA in developing these plans for each of their PWSs. It is understood that TOUA is currently working to identify their sampling sites by housing location numbers and to locate these sites on Google Earth and/or TOUA village maps. However, it is recommended that TOUA consider using RCAC to assist in the development of CSSPs for each of their water systems. RCAC has personnel who are experienced in the development of CSSPs and can offer valuable assistance at no cost to TOUA. Once the plans are developed, the CSSPs need to be submitted to the USEPA Region 9 program manager for approval. The approved CSSPs need to be used to ensure proper sample collection.

Continued in next column:

MANAGEMENT

Administrative Board – Name and description Tohono O'odham Utility Authority (TOUA) operates under resolution of the Tohono O'odham Legislative Council. The Council established a Management Board that oversees the operation of the TOUA under authority of the Second Restated Plan of Operation (5/22/1991). Among other things, the TOUA was organized, "to acquire, construct, operate, maintain, promote, and expand utility systems furnishing electric, gas, water, sewer, and telephone services within the Tohono O'odham Nation."
The Water/Wastewater Department is one of six departments within TOUA.

Training provided – Describe Continuing education is provided for staff. There is also an in-house apprenticeship program, and operational staff are cross-trained in multiple areas.

Yes No Unk N/A

By-laws or articles of incorporation? ☒ ☐ ☐ ☐

Year of enactment: 1970

Are copies available? ☒ ☐ ☐ ☐

Budget:

Exists? ☒ ☐ ☐ ☐

Adequate? ☒ ☐ ☐ ☐

Tribally subsidized? ☐ ☒ ☐ ☐

Are personnel adequately trained? ☒ ☐ ☐ ☐

Are operators properly certified? ☒ ☐ ☐ ☐

Are there sufficient personnel? ☒ ☐ ☐ ☐

Is an emergency plan available and workable? ☒ ☐ ☐ ☐

Are abandoned wells present? ☒ ☐ ☐ ☐

Do abandoned wells appear to be properly abandoned? ☒ ☐ ☐ ☐

Is operator aware of procedures regarding well abandonment? ☒ ☐ ☐ ☐

Is there an O&M manual? ☒ ☐ ☐ ☐

Is it current? ☒ ☐ ☐ ☐

Is a copy on-site? ☒ ☐ ☐ ☐

Does the system have a current Monitoring Schedule? ☒ ☐ ☐ ☐

O&M log maintained? ☒ ☐ ☐ ☐

Comments: TOUA keeps information on all water systems within lab area; additionally, information is kept electronically. Staff are well trained.

MONITORING AND RECORDKEEPING EVALUATION (Cont.)

Comments: There appears to be a minimum of 24,200 feet of 4-inch PVC pipe following the common header and prior to the arsenic treatment plant for chlorine contact time. Adequate CT for 4-log virus inactivation would be available with any detectable residual. There are approximately 15,799 gallons of storage in the transmission main. With a peak demand of ~197 gpm there would be approximately 80 minutes of contact time. Estimating a temperature of 25 degrees Celsius (CTreqd. = 2 minutes) would result in a required residual of ~0.025 mg/L following contact time for 4-log virus inactivation.

SANITARY SURVEY FORM - DIAGRAMS

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Date of Survey: 03/24/2016

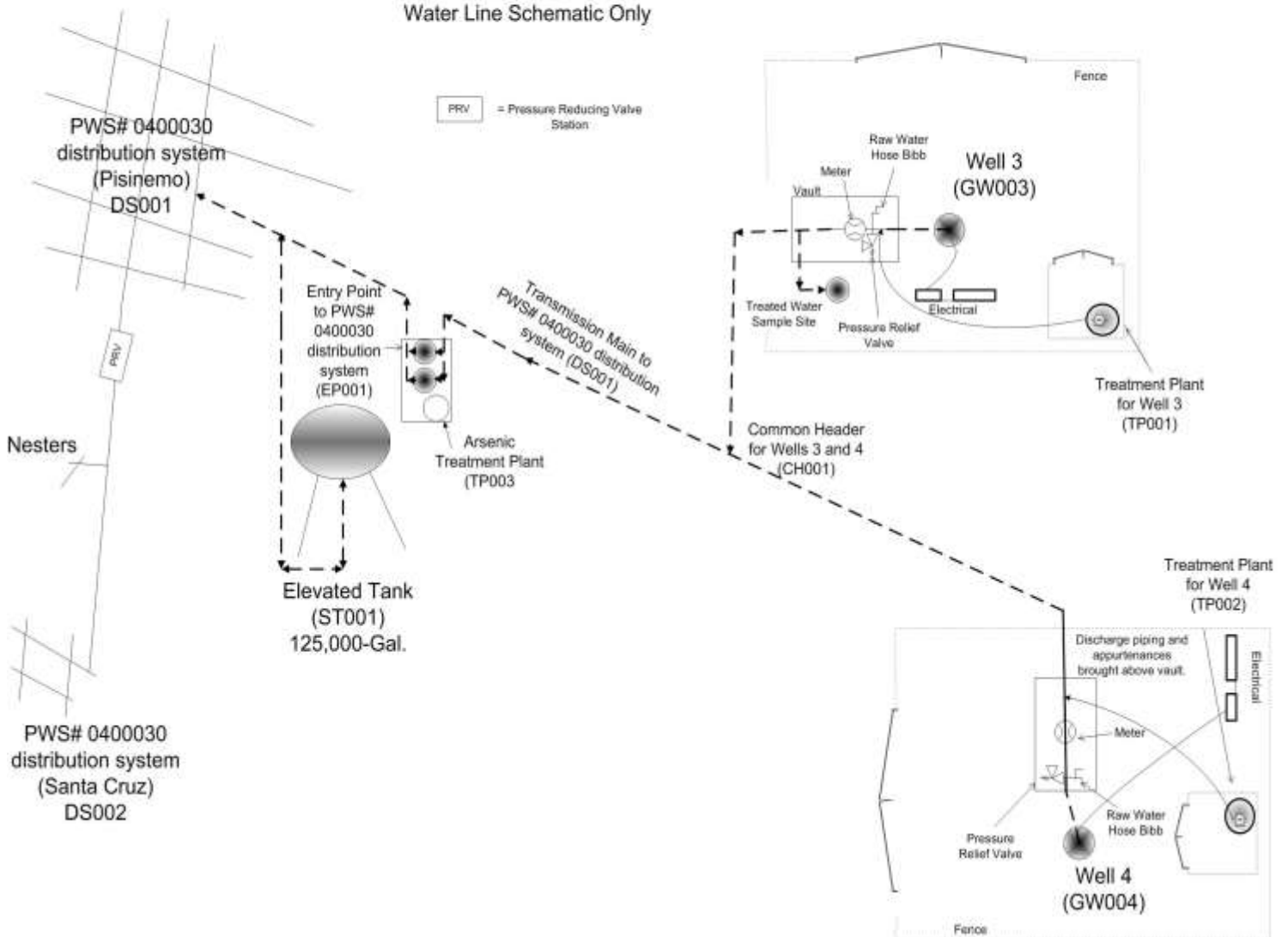
SYSTEM NAME Pisinemo Intertie

Pisinemo Intertie Schematic



No Scale
Water Line Schematic Only

PRV = Pressure Reducing Valve Station



SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030

Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Expert GPS Aerial View.



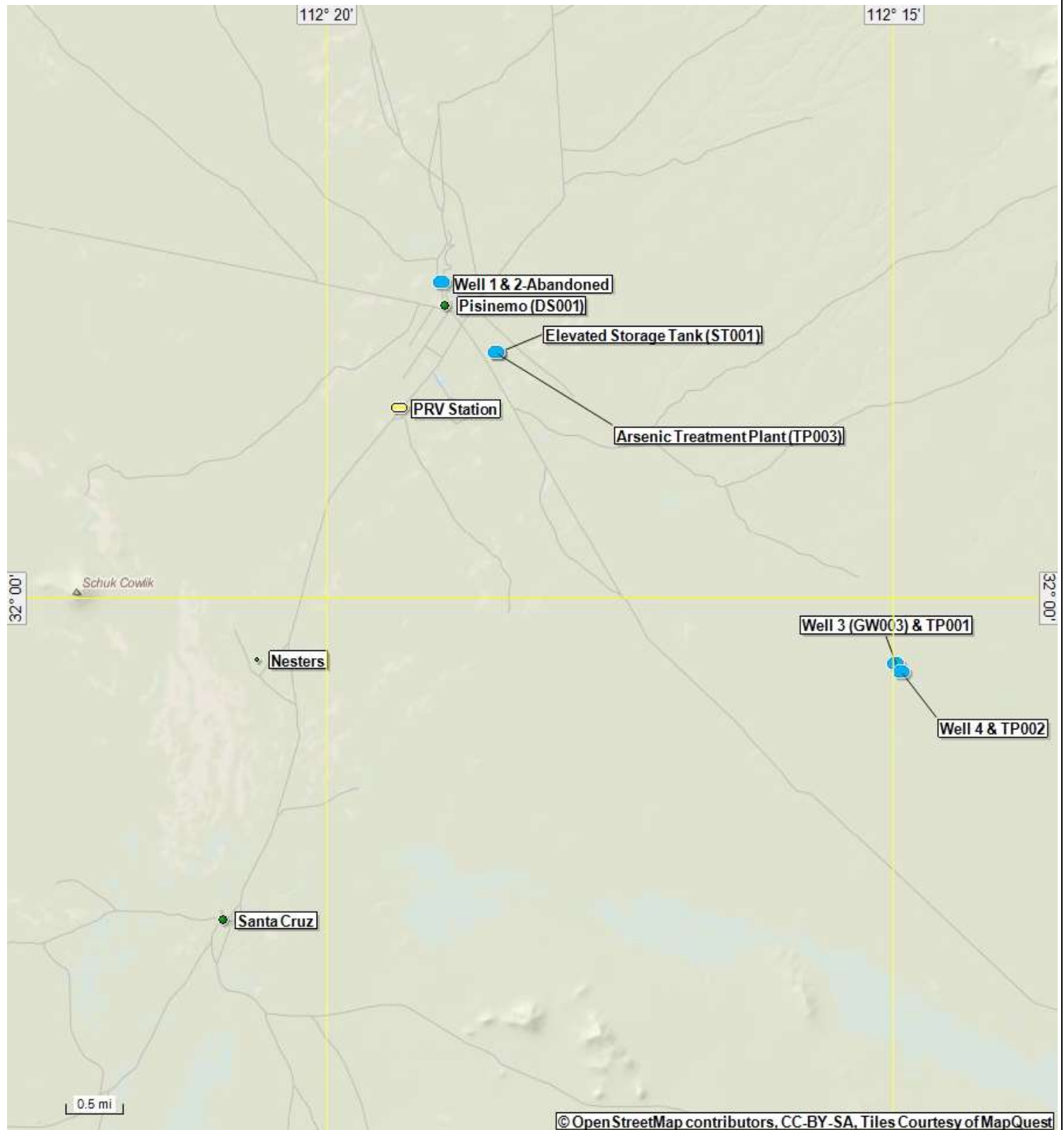
SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

ExpertGPS Street View.



SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030

Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Expert GPS Topographic Map.



SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

2016 TOUA Operator Employee Certification.

Tohono O'odham Utility Authority					
Employee Operation Certification					
			Expiration	Cert.	Issuing
Expiration Date	Certificate Level & Type	Issue Date	Date	Number	Organization
Dion Antone	Water Distribution Grade 1	5/13/2011	5/13/2014	1413	ITCA
Dion Antone	Water Distribution Grade 1	5/1/2015	Did not pass test.		ITCA
Scott Cassels	Water Distribution Grade 1	5/14/2014	5/13/2017	1403	ITCA
Scott Cassels	Water Distribution Grade 2	6/6/2014	6/6/2017	3185	ITCA
Scott Cassels	Water Treatment Grade 1	5/14/2014	5/13/2017	1404	ITCA
Scott Cassels	Small WW Treatment Lagoon	2/25/2015	2/24/2018	2720	ITCA
Scott Cassels	Very Small Water Systems	3/13/2015	3/16/2018		ITCA
Harry J. Johnson	Water Distribution Grade 1	5/13/2011	5/13/2014		ITCA
Harry J. Johnson	Water Treatment Grade 1	5/13/2011	5/13/2014		ITCA
Myrtle McIntyre	Water Treatment Grade 3	4/25/2002	3/31/2019	58286	ADEQ
Myrtle McIntyre	Water Distribution Grade 3	6/20/2002	3/31/2019	58267	ADEQ
Myrtle McIntyre	Wastewater Treatment Grade 4	1/16/1993	3/31/2019	58270	ADEQ
Myrtle McIntyre	Wastewater Collection Grade 4	1/11/1997	3/31/2019	58269	ADEQ
Myrtle McIntyre	Water Laboratory Analyst 1	8/11/2012	8/11/2018	1625	ITCA
Benjamin Valisto	Waste Water Treatment Grade 3	10/10/2014	10/10/2017	2007	ITCA
Benjamin Valisto	Water Treatment Grade 1	3/31/2015	3/31/2018		ITCA
Vernetto Ramon	Water Distribution Grade 1	8/2/2013	8/2/2019	3120	ITCA
Vernetto Ramon	Water Treatment Grade 1	3/31/2015	4/3/2018	3306	ITCA
Vernetto Ramon	Safe Drinking Water Act 202	8/19/2014			ITCA
Vernetto Ramon	Cross-Connection Control	3/27/2014			ITCA
Arlen Hendricks	Very Small Water Systems	3/13/2015	3/13/2018	3258	ITCA
Arlen Hendricks	Water Distribution Grade 1	5/1/2015	5/1/2018		ITCA
Lisa Antone	Safe Drinking Water Act 202	6/25/2015			ITCA
Lisa Antone	Very Small Water Systems	3/13/2015	3/13/2018		ITCA
Jeremy Valisto	Very Small Water Systems	3/13/2015	3/13/2018	3092	ITCA
Jordan Antone	General Module	3/13/2015	3/13/2018		ITCA
Steven Velasco	Very Small Water Systems	3/13/2015	3/13/2018		ITCA

SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Pisinemo, Nesters, and Santa Cruz Service Connections.

Memorandum

To: Myrt McIntyre – Water Department Manager

From: Jenni Gonzales – Electric & Water Billing Supervisor

Date: 3/24/2016

Re: Village Count

Village Code	Village Name	# Active Accounts	# Inactive Accounts
03	Charco 27	18	15
15	Hickiwan	56	31
18	KaKa	34	20
19	GuVo	70	44
24	Managers	51	29
29	Pia Oik	12	14
30	Pisinemo/Nestors	101	52
37	San Simon	39	12
56	Vaya Chin	19	17
63	SS Elem/WS clinic	84	25
65	Santa Cruz	18	8

Please Note: Westside Clinic is included in Pisinemo Village

SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

TOUA Meter Charges**TOHONO O'ODHAM UTILITY AUTHORITY**Schedule RC-12
Metered Service
Water & Sewer**AVAILABILITY**

Available to all premises adjacent to the Authority's lines, subject to the established Rules, Regulations, and Conditions of Service of the Authority.

CONSUMPTION CHARGE, MONTHLY**WATER****Rate 101 – Residential**

Fixed Charge	35.59
0 to 2,000 gallons	3.161/1000
2,001 to 5,000 gallons	3.213/1000
5,001 to 10,000 gallons	4.145/1000
10,001 to 30,000 gallons	4.353/1000
In excess of 30,000 gallons	4.560/1000

SEWER**Rate 101 – Residential**

Fixed Charge	6.65
0 to 5,000 gallons	1.275/1000
5,001 to 10,000 gallons	1.368/1000
10,000 to 20,000 gallons	1.472/1000
In excess of 20,000 gallons	1.523/1000

*Sewer consumption is average of previous December, January, and February usage.

NOTE: The word "Month or Monthly" as used in this schedule is defined to be the elapsed time between two (2) successive meter readings approximately thirty (30) days apart.

TERMS OF PAYMENT

Bills for service are due and payable upon receipt. Bills with a balance of \$500.00 or more and thirty (30) days delinquent from "Due Date" shall be assessed a one and one-half percent (1 ½ %) per month penalty charge. (See T.O.U.A. Rules and Regulations for Non-payment, Disconnects, and Policies).

Should service be discontinued for non-payment, re-connection shall be made during regular working hours after the bill is paid in full plus a \$25.00 re-connection fee.

Approved by the TOUA Management Board

Date: January 23, 2014

Effective Date: January 1, 2016

SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030

Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Additional TOUA Meter Charges.

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 102 – Residential (San Xavier)

Fixed Charge	35.59
0 to 2,000 gallons	3.161/1000
2,001 to 5,000 gallons	3.213/1000
5,001 to 10,000 gallons	4.145/1000
10,001 to 30,000 gallons	4.353/1000
In excess of 30,000 gallons	4.560/1000

SEWER

Rate 102 – Residential (San Xavier)

Fixed Charge	6.65
0 to 5,000 gallons	1.275/1000
5,001 to 10,000 gallons	1.368/1000
10,000 to 20,000 gallons	1.472/1000
In excess of 20,000 gallons	1.523/1000

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 108 – Hydrant Meter

Fixed Charge	40.67
0 to 2,000 gallons	3.161/1000
2,001 to 5,000 gallons	4.353/1000
5,001 to 10,000 gallons	4.405/1000
10,001 to 15,000 gallons	4.093/1000
15,001 to 30,000 gallons	4.197/1000
In excess of 30,000 gallons	4.353/1000

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 109 – Commercial Meter Size 5/8 x 3/4

Fixed Charge	40.67
2,000 gallons or less	3.161/1000
2,001 to 5,000 gallons	4.353/1000
5,001 to 10,000 gallons	4.405/1000
10,001 to 15,000 gallons	4.093/1000
15,001 to 30,000 gallons	4.197/1000
In excess of 30,000 gallons	4.353/1000

SEWER

Rate 109 – Commercial Meter Size 5/8 x 3/4

Fixed Charge	7.09
0 to 10,000 gallons	1.387/1000
10,001 to 20,000	1.451/1000
In excess of 20,000 gallons	1.523/1000

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 111 – Commercial Meter Size 1 Inch

Fixed Charge	108.78
10,000 gallons or less	-
10,001 to 15,000 gallons	4.166/1000
15,001 to 30,000 gallons	4.353/1000
In excess of 30,000 gallons	4.871/1000

SEWER

Rate 111 – Commercial Meter Size 1 Inch

10,000 gallons or less	27.29
10,001 to 20,000 gallons	1.387/1000
In excess of 20,000 gallons	1.658/1000

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 112 – Commercial Meter Size 1 1/2 Inch

Fixed Charge	250.24
15,000 gallons or less	-
15,001 to 30,000 gallons	4.508/1000
In excess of 30,000 gallons	4.871/1000

SEWER

Rate 112 – Commercial Meter Size 1 1/2 Inch

15,000 gallons or less	58.24
15,001 to 30,000 gallons	1.387/1000
In excess of 30,000 gallons	1.627/1000

CONSUMPTION CHARGE, MONTHLY

WATER

Rate 113 - Commercial Meter Size 2 Inch

Fixed Charge	382.34
30,000 gallons or less	-
In excess of 30,000 gallons	4.879/1000

SEWER

Rate 113 – Commercial Meter Size 2 Inch

30,000 gallons or less	104.43
In excess of 30,000 gallons	1.658/1000

SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Additional TOUA Meter Charges

<u>CONSUMPTION CHARGE, MONTHLY</u>		<u>CONSUMPTION CHARGE, MONTHLY</u>	
	<u>WATER</u>		<u>WATER</u>
Rate 114 - Commercial Meter Size 4 Inch		Rate 115 - Commercial Meter Over 4 Inch	
Fixed Charge	1,515.90	Fixed Charge	2499.75
150,000 gallons or less	-	150,000 gallons or less	-
In excess of 150,000 gallons	4.923/1000	In excess of 150,000 gallons	4.923/1000
	<u>SEWER</u>		<u>SEWER</u>
Rate 114 - Commercial Meter Size 4 Inch		Rate 115 - Commercial Meter Over 4 Inch	
150,000 gallons or less	369.80	150,000 gallons or less	598.50
In excess of 150,000 gallons	1.658/1000	In excess of 150,000 gallons	1.658/1000

*Sewer consumption is average of previous December, January, and February usage.

*Sewer consumption is average of previous December, January, and February usage.

<u>CONSUMPTION CHARGE, MONTHLY</u>		<u>CONSUMPTION CHARGE, MONTHLY</u>	
	<u>WATER</u>		<u>WATER</u>
Rate 117 - Commercial Meter Size 3 Inch		Rate 121 - Residential (Mission View)	
Fixed Charge	582.75	Fixed Charge	36.52
55,000 gallons or less	-	0 to 10,000 gallons	4.041/1000
In excess of 55,000 gallons	4.923/1000	10,001 to 22,000 gallons	5.378/1000
		In excess of 22,000 gallons	6.591/1000
	<u>SEWER</u>		<u>SEWER</u>
Rate 117 - Commercial Meter Size 3 Inch		Rate 121 - Residential (Mission View)	
55,000 gallons or less	166.53	Fixed Charge	7.59
In excess of 55,000 gallons	1.679/1000	0 to 20,000 gallons	1.907/1000
		In excess of 20,000 gallons	1.969/1000

*Sewer consumption is average of previous December, January, and February usage.

*Sewer consumption is average of previous December, January, and February usage.

<u>CONSUMPTION CHARGE, MONTHLY</u>		<u>CONSUMPTION CHARGE, MONTHLY</u>	
	<u>WATER</u>		<u>WATER</u>
Rate 127 - Commercial (MV) Meter Size 5/8 x 3/4		Rate 131 - Commercial (MV) Meter Size 2 Inch	
Fixed Charge	40.88	37,000 gallons or less	365.19
0 to 1,000 gallons	-	In excess of 37,000 gallons	8.460/1000
1,001 to 10,000 gallons	4.446/1000		
10,001 to 22,000 gallons	6.954/1000		
In excess of 22,000 gallons	8.457/1000		
	<u>SEWER</u>		<u>SEWER</u>
Rate 127 - Commercial (MV) Meter Size 5/8 x 3/4		Rate 131 - Commercial (MV) Meter Size 2 Inch	
Fixed Charge	7.83	Fixed Charge	8.58
0 to 10,000 gallons	1.889/1000	1,000 gallons or less	-
In excess of 10,000 gallons	2.104/1000	1,000 to 20,000 gallons	1.938/1000
		In excess of 20,000 gallons	2.062/1000

*Sewer consumption is average of previous December, January, and February usage.

*Sewer consumption is average of previous December, January, and February usage.

SANITARY SURVEY FORM - DIAGRAMS

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PWSID 0400030
Date of Survey: 03/24/2016

SYSTEM NAME Pisinemo Intertie

Additional TOUA Meter Charges**TOHONO O'ODHAM UTILITY AUTHORITY**

Schedule RC-Outside Source-12

Metered Service

Water & Sewer

AVAILABILITY

Available to Bureau Indian Affairs Complex in Sells, subject to the established Rules, Regulations, and Conditions of Service of the Authority.

CONSUMPTION CHARGE, MONTHLY**WATER****Rate 141 – Commercial**

999,333 gallons or less
In excess of 999,333 gallons

1,016.65
4.923/1000

SEWER**Rate 141 – Commercial**

999,333 gallons or less
In excess of 999,333 gallons

372.96
1.658/1000

*Sewer consumption is average of previous December, January, and February usage.

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Should service be discontinued for non-payment, re-connection shall be made during regular working hours after the bill is paid in full plus a \$25.00 re-connection fee.

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